IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	:	
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Tamraparni DASU	:	Attorney Ref.: 2003-0107
	:	
Serial No.: 10/782,183	:	Art Unit: 2121
	:	
Filed: February 18, 2004	:	Examiner: Nathan H. Brown, Jr.
	:	

FOR: IMPLEMENTING DATA QUALITY USING RULE BASED AND KNOWLEDGE ENGINEERING

AMENDMENT

MAIL STOP: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Responsive to the non-final Office Action dated July 18, 2006, kindly enter the following amendment and remarks.

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 6 of this paper.

AMENDMENT

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A data quality auditing tool, comprising:

a rule-based programming data analyzer that compares received data to be audited against a set of rule-based criteria and identifies as unacceptable data that data which violate the rule-based criteria, wherein the set of rule-based criteria is implemented incrementally as an understanding of rules associated with the set of rule-based criteria is gained.

2. (Original) The tool as in claim 1, wherein the rule-based criteria are business rules and data conventions.

3. (Original) The tool as in claim 1, wherein the rule-based criteria are data rules represented as constraints on data which must be met.

4. (Original) The tool as in claim 3, wherein the constraints represent business rules and data conventions.

5. (Original) The tool as in claim 3, wherein the constraints comprise expert system production rules.

6. (Original) The tool as in claim 3, wherein the constraints are static and are applied through the comparison against the data as is.

7. (Original) The tool as in claim 6, wherein the constraints are dynamic and are applied through the comparison against data flows.

8. (Original) The tool as in claim 1, wherein the analyzer comprises a match functionality that compares received data records representing the data to be audited against the set of rule-based criteria to generate a conflict set of one or more candidate rules which are met.

9. (Original) The tool as in claim 8, wherein the analyzer further comprises a conflict resolution functionality that assigns priority among and between the one or more candidate rules which are met and selects one or more rules for execution.

10. (Original) The tool as in claim 9, wherein the analyzer further comprises an action functionality that implements actions to be taken on the data as specified by the one or more rules selected for execution.

11. (Currently amended) A method for data auditing, comprising:

comparing received data to be audited against a set of rule-based criteria; and

identifying as unacceptable data that data which violate the rule-based criteria, wherein the set of rule-based criteria is implemented incrementally as an understanding of rules associated with the set of rule-based criteria is gained.

12. (Original) The method as in claim 11, wherein the rule-based criteria are business rules and data conventions.

13. (Original) The method as in claim 11, wherein the rule-based criteria are data rules represented as constraints on data which must be met.

14. (Original) The method as in claim 13, wherein the constraints represent business rules and data conventions.

15. (Original) The method as in claim 13, wherein the constraints comprise expert system production rules.

16. (Original) The method as in claim 13, wherein the constraints are static and are applied through the comparison against the data as is.

17. (Original) The method as in claim 16, wherein the constraints are dynamic and are applied through the comparison against data flows.

18. (Original) The method as in claim 11, wherein comparing comprises matching received data records representing the data to be audited against the set of rule-based criteria to generate a conflict set of one or more candidate rules which are met.

19. (Original) The method as in claim 18, further comprises resolving conflicts by assigning priority among and between the one or more candidate rules which are met and selecting one or more rules for execution.

20. (Original) The method as in claim 19, further comprising implementing actions to be taken on the data as specified by the one or more rules selected for execution.

REMARKS

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested. Claims 1 and 11 are amended. No new matter is added.

Rejection of Claims 1-3, 6, 10, 11-13, 16 and 20 Under 35 U.S.C. §102(b)

The Examiner rejects claims 1-3, 6, 10, 11-13, 16 and 20 under 35 U.S.C. §102(b) as being anticipated by Gobat (U.S. Patent No. 5,933,836) ("Gobat"). Applicant respectfully submits that amended claims 1 and 11 are patentable over the Gobat reference. Applicant has added the limitation that recites "wherein the set of rule-based criteria is implemented incrementally as an understanding of rules associated with the set of rule-based criteria is gained" in claims 1 and 11. Applicant respectfully submits that Gobat fails to teach or suggest such a concept of implementing the set of rule-based criteria incrementally. Accordingly, Applicant respectfully submits that claims 1 and 11 are patentable as well as the claims that depend therefrom, claims 2-10 and 12-20.

Rejection of Claims 4 and 14 Under 35 U.S.C. §103(a)

The Examiner rejects claims 4 and 14 under 35 U.S.C. §103(a) as being unpatentable over Gobat in view of Hay ("A Repository Model – Business Rules – Part II (Action Assertions)", 2002) ("Hay"). Applicant respectfully traverses the rejection of claims 4 and 14 as being unpatentable over Gobat in view of Hay.

Applicant respectfully submits that one of skill in the art would not have sufficient motivation or suggestion to combine Gobat with Hay. The Office Action on page 5 notes that it would be obvious at the time that the invention was made to one of skill in the art to combine Gobat with Hay to organize terms and facts as structural assertions and business rule constraints as action assertions. Applicant notes that the Examiner carries the burden of establishing a *prima*

facie case of obviousness and Applicant respectfully submits that burden has not been carried in this Office Action.

Although the burden has not be carried, Applicant provides a reason why one of skill in the art would not have sufficient motivation or suggestion to combine these references. First of all, Applicant notes that Gobat relates to a facility for providing and maintaining automatically the integrity of data associated with respective databases. Notably, the Abstract states that the facility provides a module for interfacing applications having associated databases such that in response to receipt of a data request from one of the applications, the respective interfacing module uploads the requested data from the associated database. The basic feature taught in Gobat relates to insuring that data in various databases is consistent across the various databases.

This focus and subject matter of the Gobat reference differs from the Hay reference. Hay teaches repository model wherein he looks at business rules from a metadata perspective. As noted on page 9 of the Hay reference, Hay teaches that business rules put a new spin on the process of understanding what is going on in the business. They teach modeling the metadata of business rules to allow them to see just what the nature of such a spin is. Applicant notes that the various figures disclosed in the Hay reference relate to the metadata models business rule constraints and constraint arguments and roles and violations of the constraints. Accordingly, Hay teaches a metadata repository may look like from the perspective of business rules. Applicant respectively submits that the metadata repository taught in Hay clearly differs from the concepts taught in Gobat which relate to insuring the data within various databases is consistent. Applicant notes that a basic difference in which Gobat relates to actual data in databases whereas Hay does not teach anything regarding the actual data but rather a metadata repository. Accordingly, even combining Gobat with Hay would be unworkable in the sense that the categories discussed in Hay which are referenced by the Office Action on page 5 such as terms,

facts and business rule constraints are categories that would be associated with how to model the metadata of business rules rather then the actual data. Whereas it is clear in Gobat that the actual data in the various databases that are referenced and that the interfacing module corrects any inconsistency in accordance with the defined data rules.

Accordingly, Applicant respectfully submits that the *prima facie* case has not been established by the Examiner in the Office Action and that when the substance and the suggestive power of each of the cited references is properly analyzed that one of skill in the art would not have sufficient motivation or suggestion to combine these references. Accordingly, Applicant respectfully submits that given that Gobat should not be combined with Hay that claims 4 and 14 are patentable and in condition for allowance.

Rejection of Claims 5 and 15 Under 35 U.S.C. §103(a)

The Examiner rejects claims 5 and 15 under 35 U.S.C. §103(a) as being unpatentable over Gobat in view of Ceri et al. ("Deriving Production Rules for Constraint Maintenance", 1990) ("Ceri et al."). Applicants respectfully submit that since inasmuch as claim 5 depends from claim 1 and claim 15 depends from claim 11 that these claims are patentable inasmuch as the parent claims are patentable.

Rejection of Claims 7 and 17 Under 35 U.S.C. §103(a)

The Examiner rejects claims 7 and 17 under 35 U.S.C. §103(a) as being unpatentable over Gobat in view of Plale et al. ("dQUOB: Managing Large Data Flows Using Dynamic Embedded Queries", 2000) ("Plale et al."). Applicant respectfully traverses this rejection and submits that one of skill in the art would not have sufficient motivation or suggestion to combine Gobat with Plale et al. Applicant specifically notes in this case that the Examiner has made no

obviousness argument and clearly has made no *prima facie* case for combining these references. The Office Action pages 5 and 6 merely recite teachings of Gobat and what Gobat does not teach and then discusses on page 6 what Plale et al. teach without any analysis of motivation or suggestion. Applicant notes, even though, that the Examiner has made no *prima facie* case and no argument in support of the obviousness to combine these references that one of skill in the art would not be motivated to combine these references that one of skill in the art would not be motivated to combine these references simply because the Plale et al. reference clearly relates to large data flows using embedded dynamic queries. The focus of the technology in Plale et al., inasmuch as it relates to identifying a client's need of specific information from high volume data streams, clearly differs from the invention of Gobat which doesn't relate to high volume data streams but to multiple databases that may have inconsistent information throughout the different databases. Applicant simply submits that the concepts differ in these two references and one of skill in the art would simply not have sufficient motivation to actually combine these two references inasmuch as they have a totally different focus and may not even arguably be analogous art.

Furthermore, Applicant respectfully submits that even if combined these references fail to teach the limitations of claims 7 and 17. For example, in claim 7 it recites that the constraints recited in claim 6 are dynamic and are applied through the comparison against data flows. Plale et al. teach in section 3 as discussed by the Examiner that the dQUOB system is a tool for creating queries with associated computation and dynamically embedding these queries/action roles into a data stream. This clearly differs from the limitation of claim 7 wherein the constraints are dynamic. The constraints recited in claim 7 are defined further in claim 3 where the rule base criteria are data rules represented as constraints on data which must be met. The constraints on data further relate to the data quality auditing tool recited in claim 1 in which the

data analyzer compares received data to be audited against a set of real base criteria and identifies as unacceptable data that data which violates the rule base criteria. That clearly differs in its application of comparing the received data to a set of real base criteria wherein the rule base criteria are data rules represented as constraints which differs from creating queries and associated computation and dynamically embedding the queries or action roles into the data stream. Clearly, claim 7 wherein the constraints are dynamic does not involve embedding anything into a data stream and certainly does not involve embedding the constraints dynamically into a data stream as may be taught in the Plale et al. reference.

Accordingly, Applicant respectfully submits that claims 7 and 17 are patentable and in condition for allowance.

Rejection of Claims 8-9 and 18-19 Under 35 U.S.C. §103(a)

The Examiner rejects claims 8-9 and 18-19 under 35 U.S.C. §103(a) as being unpatentable over Gobat in view of Klein ("Supporting Conflict Resolution in Cooperative Design Systems", 1991) ("Klein"). Applicant respectfully traverses the rejection of claim 8, 9, 18 and 19. Applicant challenges the Office Action's conclusion that it would be obvious to combine Gobat with Klein as argued in the Office Action to express domain and control as produced separately such that each kind of expertise is available in its original form where it is much more understandable and easier to work with. Applicant respectfully notes that Klein and Gobat are not even analogous art. As discussed above, Gobat relates to a facility for providing and maintaining automatically the integrity of data associated with the respective data applications. In contrast to this data base management based approach, Klein teaches how to provide conflict resolution in cooperative design systems. The basic approach of Klein is to resolve conflicts between the interaction of experts to design a complex modern day artifacts.

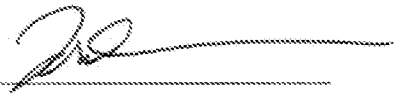
such as the design of a car. For example, on page 1 of Klein it discusses that design has increasingly become a cooperative endeavor carried out by multiple agents with diverse kinds of expertise. For example the design of a car may require experts on design for function, ease of manufacturability, safety regulations, available means for shipping of vehicles, potential markets and so on. The development of tools and underlying theories for support cooperative design has lagged behind the growing needs implied by this evolution. As Klein continues in his paper the basic focus of his disclosure is to resolve the conflicts that exist among different design agents as they go through a process such as designing a car. This is a completely different context from the basic database quality management system of Gobat and Applicant would respectfully submit that one of skill in the art would certainly have insufficient motivation to apply the teachings of Klein with the teachings of Gobat. Notably, while Klein teaches that the conflicts relate to cooperative work by a group of experts for a particular design such as a car in contrast to this Gobat teaches in column 1, lines 10-36 the example of a bank that stores related data such as account information, credit history, and customer data in different databases. Such basic data stored in various databases certainly differs in its simplicity and use when compared with the interaction and the necessity to resolve conflicts between groups of experts when designing a car. Applicant respectfully submits that clearly when the overall suggestive power of Gobat and Klein are compared and analyzed that one of skill in the art certainly would not be *motivated* to seek out the information in the other reference. Accordingly, Applicant respectfully submits that claims 8, 9, 18 and 19 are therefore patentable and in condition for allowance.

CONCLUSION

Having addressed all rejections and objections, Applicant respectfully submits that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited. If necessary, the Commissioner for Patents is authorized to charge or credit the **Isaacson, Irving, Stelacone & Prass, LLC, Account No. 50-2960** for any deficiency or overpayment.

Respectfully submitted,

Date: October 18, 2006

By: 

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